## REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

Claims 1, 4 and 6 have been amended for clarity. New dependent Claims 10-12 recite an inherent feature of the invention, as further explained below.

Claims 1-9 were rejected under 35 U.S.C. §103 as being obvious over Tojo et al, as representative of the disclosure of WO01/77412, in view of newly cited U.S. patent 6,383,300 (Saito et al). This rejection is respectfully traversed.

Tojo et al discloses a fluorine gas generator including an electrolytic bath 3, wherein hydrogen fluoride (HF) gas is fed via a HF feed line (unnumbered) terminating in the bath 3 at an HF feed port 26 (col. 10, lines 24-27 and 44-48). When electrolysis is halted, the fluorine gas in the interior of the anode chamber is vented and replaced with a purge gas in order to maintain the liquid level in the electrolytic bath (col. 6, lines 45-47; col. 9, lines 38-50). Since the purge gas is introduced to maintain the liquid level in the electrolytic bath, it is fed from the purge gas cylinder 18 to the bath via the inlet port 15 and 17 which are independent of the HF feed line.

In contrast, Claims 1, 4 and 6 recite an inert gas substitution means for eliminating the hydrogen fluoride gas remaining in at least the part of the HF feed line, including an inert gas feed line directly connected to the hydrogen fluoride gas feed line. This inert gas substitution means provides an improved result as compared to Tojo et al, insofar as the purge gas is provided directly to the hydrogen fluoride gas feed line so that the purge gas will not be contaminated with mist from the bath, as can occur in Tojo et al.

Claims 1, 4 and 6 further recite an automatic valve disposed on the hydrogen fluoride gas feed line and capable of being closed on the occasion of interruption of hydrogen fluoride gas feeding. This valve creates a further problem that is not recognized in Tojo et al: the closure of the automatic valve can create a negative pressure downstream of the valve,

possibly resulting in an inflow of the electrolytic bath into the HF feed line, and clogging of the feed line due to solidification of the bath. The inert gas substitution means of the present invention is provided for eliminating the hydrogen fluoride gas remaining in at least part of the line on the side downstream from said first automatic valve by substituting an inert gas for the interrupted hydrogen fluoride gas using an inert gas feed line directly connected to the hydrogen fluoride gas feed line, and so prevents the creation of a negative pressure downstream of the valve (p. 10, lines 26-36) whereby an inflow of the electrolytic bath into the HF feed line is less likely to occur. The purge gas supply device of Tojo et al could not provide this result since it is independent of the HF feed line.

The Office Action recognized that the purge gas supply device of Tojo et al is independent of the HF feed line, and so relied on Saito et al to teach a purge gas supply device connected to an HF feed line for a reactor. It is respectfully submitted, however, that the invention is unobvious from this prior art since it provides *unpredictable* improved results. *KSR International Company v. Teleflex Incorporated*, 127 S. Ct. 1727 (2007). As already explained, by substituting an inert gas for the interrupted hydrogen fluoride gas using an inert gas feed line directly connected to the hydrogen fluoride gas feed line, the invention prevents the creation of a negative pressure downstream of the valve, upon its closure, so that inflow of the electrolytic bath into the HF feed line is less likely to occur. This improved result would not have been predictable from Tojo et al since the purge device of Tojo et al is independent of the HF feed line.

Nor would the aforementioned improved result have been obvious or predictable from Saito et al. Saito et al discloses a reactor tube 11 for coating a substrate. A gas source 35a supplies a silicon based gas and a gas source 35b supplies ammonia. Other sources 35c and 35d respectively supply TEOS and HF gas. These gases are supplied to the reactor tube 11 at different times and must be purged from the reactor tube and gas supply lines to prevent

contamination of the wafer coating. Sources 36a-36b are therefore provided for supplying nitrogen purge gas to the respective lines 33a-33b and the gas supply pipes 31a-31b.

The disclosure of Saito et al would not have rendered it obvious to have modified Tojo et al such that a purge gas is provided directly to the hydrogen fluoride gas feed line, for at least two reasons.

First, Saito et al would not have motivated one skilled in the art to have provided Tojo et al with a purge gas line in the HF feed line leading to the feed port 26. Saito et al purges the gas supply pipes 31a-31b using the nitrogen gas from sources 36a-36b to prevent contamination of the atmosphere in the reactor tube 11 from residual reactive gas remaining in the gas supply pipes when a different gas is introduced into the reactor tube during the wafer coating process. On the other hand, the HF feed line of the fluorine gas generator of Tojo et al does not require purging of HF gas to prevent HF contamination of the gas generator, since HF is the only reactive gas that is introduced.

Second, the inert gas substitution means of the invention provides an unpredictable improved result: preventing the inflow of the electrolytic bath into the HF feed line so that the hydrogen fluoride feed line will not be closed by back-flown and solidified electrolyte (Claims 10-12). This result would not have been predictable from Saito et al since the reaction tube 11 of Saito et al contains a gas, not a liquid, and so clogging due to back flow and solidification of a liquid into the gas supply piles of Saito et al could not occur therein. Since such unpredictable improved results are a hallmark of unobviousness, the claims define over any combination of this prior art.

Applicants believe that the present application is in a condition for allowance and respectfully solicit an early notice of allowability.

Respectfully submitted,

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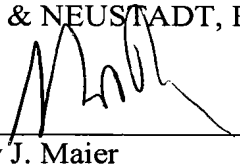

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